



## WHOSE BABY IS IT?

Mr. And Mrs. Juggersmith just brought home their new baby from the hospital. For years they have wanted a baby of their own. Mrs. Juggersmith had some difficulties during delivery and there was a little bit of confusion in the delivery room. The hospital records indicated that the baby was very healthy and in excellent condition. The Juggersmiths had a neighbor whose baby was due on a date very close to theirs. After they returned home, the Juggersmiths found out that the Linell's baby was born on the same day also. The baby was a beautiful healthy baby also.

On the same day someone had left a new baby on the door of the hospital. According to the hospital records the baby was in a lot of stress and in not very good condition.

Upon arrival at home the Juggersmith's baby developed a respiratory infection (very bad cold). Mrs. Juggersmith called the Doctor. He told her to bring the baby right in. The baby was hospitalized immediately to receive medication in it's veins. When the baby's blood was drawn to find out the type, it was not the same type as either Mr. or Mrs. Juggersmith.

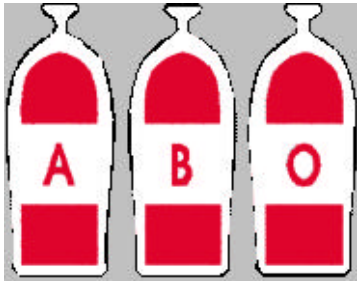
How could that happen?

Did they take home the right baby?

Can you find out?

Using the Scientific Method, write up a good plan to find out if the Juggersmiths have their own baby or not.

Check with your teacher to see if your plan is a good one and prevent any major mistakes it may have before you complete this!



### Major information

There are 3 blood genes that pair up to make 4 different phenotypic blood types: A, B, and O.

Genotype possibilities for the different types are as follows:

We will label the genes like this: A = A, B = B, O = I

Blood type A = AA or Ai

Blood type B = BB or Bi

Blood type O = ii

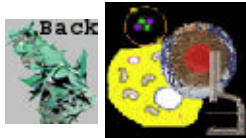
Blood type AB = AB *Special Type of gene combination. See explanation below.*

Using Punnett squares try to see if there could be some combination of blood genes the Juggersmith's may have and still have the right baby.

If there is not a possibility, how can they find out who the correct parents are?

Which genes are dominant and which are recessive?

**Special gene combination** - AB blood type is called **co-dominance**. Co-dominance is when both of the alleles are dominant. Because they are both dominant, both are expressed the phenotype.



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